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Third Meeting of the Advisory Panel on Preventive Medicine

Bilthoven, The Netherlands
6 - 7 June 1985

REPORT *

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PREFACE

The first and second meeting of the Advisory Panel on Preventive Medicine were convened in February and November 1984, respectively to advise and guide UNIDO in its programme for the industrial production of biologicals (IPB), - which in response to a recommendation of the Second Consultation on the Pharmaceutical Industry - will include effective assimilation of technology and control procedures by implementing long-term technical assistance and support programmes (UNIDO/ID/311, para. 20).

Based on the recommendations of the Panel the UNIDO Secretariat prepared the second and third drafts of the Model Programme for the Production of Vaccines in Developing Countries, which in its final form will be the first volume of the basic technical documentation of IPB (UNIDO/IO.617, para. 6 to 8). Parallelly, a project for the realization of the Model Programme started to be developed in Africa.

The Advisory Panel on Preventive Medicine met in Bilthoven, The Netherlands from 6 to 7 June, 1985 in order to review the progress of UNIDO's IPB programme in accordance with the recommendations of its first and second meeting (UNIDO/IO. 583, paras. 8 to 22 and UNIDO/IO. 617, paras. 6 to 17).

I. ORGANISATION OF THE MEETING

Opening of the Meeting

1. The meeting was opened by Dr. Charles Mérieux, Chairman of the Panel. In his inaugural address on behalf of the Panel he expressed his acknowledgements to Dr. Hans Cohen, General Director, National Institute of Public Health and Environmental Hygiene (RIVM) for hosting the meeting. He stressed the importance of the activity of UNIDO aiming to develop technical capabilities and infrastructure for production of biologicals in developing countries and expressed satisfaction on the progress made by the Secretariat in the implementation of the IPB programme since the second meeting of the Panel, Bogota, Colombia, in November 1985. He welcomed the representative of PAHO, however he expressed his regret on account of the absence of the representatives of WHO Headquarters, UNICEF and the Scientific, Technical and research Commission of Organization for African Unity (OAU).

The Unido Secretariat's Presentation to the Advisory Panel

2. Mrs. A. Tcheknavorian, Acting Head of the Chemical Industries Branch, Division of Industrial Operations and Chairperson of the Task Force on the Pharmaceutical Industry, UNIDO gave account of the activities of IPB programme since the second meting of the Panel. She emphasized that based on the recommendations of the Panel, the preparation of the "Model Programme for the Production of Vaccines in Developing Countries", UC/GLO/84/120 has progressed well and the second draft of this document was sent in advance to the members of the Panel with a letter requesting their comments at the end of February 1985. Major revision of Chapter 3, "Economic Aspects of Vaccine Production and Control" was carried out by the Secretariat, and minor amendments were done in Chapter 2, "Quality Control of Vaccines" and in Chapter 4, "Lay-out of Technical Facilities for Production of Vaccines". She noted that the "Terms of Reference of the Advisory Panel on Preventive Medicine (Industrial Production of Biologicals) was given in the Report on the Second Meeting of the Panel (UNIDO IO.617, Annex I).

3. In her presentation she gave a brief review on the programme for the Industrial Development Decade for Africa (IDDA), 1980 - 1990. Among the objectives of the Decade is the attainment, by Africa, of 1.4 per cent of world industrial output by 1990, and 2 per cent by the year 2000. This will be achieved through the promotion of domestic industry, e.g. by the establishment of pilot demonstration plants. These plants would help in the commercialization of traditional technologies and the adaptation of new technologies in such areas as food processing, building materials, basic chemicals, pharmaceuticals, etc. They would also provide a clear demonstration to other African countries, therefore would promote intra-African industrial co-operation. She informed the Panel that an official request for the technical assistance for the project entitled "Establishment of a Pilot Demonstration Plant for Production of Vaccines for Africa", RP/CMR/85/601 was received from the Ministry of Planning and Territorial Development, Yaoundé, Cameroon through UNDP office on 8 May 1985. The Government of Cameroon also expressed its interest to provide the facilities of the National, Veterinary Laboratory (LANAVET), Garoua for realization of the Model Programme in a form of a pilot demonstration plant in Africa. She stressed the importance of this project in the IPB programme and said that development of the project and the preparation of the project document were in progress.

The Agenda of the Meeting

4. The agenda was as follows: (i) opening of the meeting, (ii) adoption of the report on the second meeting of the Panel, (iii) discussions on the third draft of the Model Programme for Production of Vaccines in Developing Countries, (iv) discussions on the realization of the Model Programme in Africa, (v) discussions on a regional meeting in Africa on the availability and distribution of vaccines, (vi) discussions on the possibilities of fund raising for the IPB programme, and (vii) date of the next meeting.

Adoption of Documents of the IPB Programme

5. During the two-days meeting the Panel approved the Report of the Second Meeting (UNIDO/IO.617) including the Terms of Reference of the Advisory Panel on Preventive Medicine (Industrial Production of Biologicals).

Documentation

6. Working papers for the meeting were as follows:

(i) Model Programme for the Production of Vaccines in Developing Countries, Third draft, UC/GLO/84/120.

(ii) Report on mission for establishment of a pilot demonstration plant for production of human vaccines for Africa, Cameroon, 23-30 April 1985 (by Mr. Csizer and Mr. van Steenis).

(iii) Regional meeting on the availability and distribution of vaccines produced in Africa, UF/RAF/84/252.

Visits

7. Dr. Cohen organized a visit for the members of the Panel within the facilities of RIVM. The members visited the production facilities for vaccines, the laboratory for carcinogenicity and mutagenicity testing and the mobile unit for testing of air pollution.

II. CONCLUSIONS AND RECOMMENDATIONS

8. At the Second Meeting of the Advisory Panel on Preventive Medicine (Bogota, Colombia, 1984) concern was expressed that UNIDO had not been invited to participate in the 1984 Bellagio Conference on the Protection of the World's Children.

   The Second Bellagio Conference is scheduled to take place in Bogota in October 1985.

9. The Panel recommends that UNIDO should declare its interest in participating in this Conference and of collaborating with the other members of the Task Force for Child Survival.

   If this approach is favourably received, the Panel agreed that Dr. Phillippe Stoeckel should accompany the UNIDO representative to the Conference.

10. Having reviewed and discussed the third draft of the Model Programm for Production of Vaccines in Developing Countries, and considered the additional information supplied by the authors of the draft, the Panel congratulated the Director General of the RIVM and his team on the high quality of the document, and approved it as the Model Programme to be put forward by UNIDO to the governments of developing countries.

11. The Panel recommended that certain items be either added or expanded in the final draft of the Model Programme.These items include: the addition, in Chapter 3, of standard-cost data relating to the vaccines produced by the unit-processing methods and an indication of the cost per immunized child; the further elaboration of Chapter 5 concerning training, to highlight the necessity of local training; finally, the editing by UNIDO of the definitive text.

12. The Panel recommended the drafting of an explanatory memorandum, reflecting the views of Panel members, and drawing the attention of countries interested in implementing the Model Programme to a number of considerations and pre-requisites which include the following:

- this is a model programme; there are alternative production systems and methods;
- the production of Oral Poliomyelitis vaccine is not-included in the present Model Programme and may be covered in a later UNIDO document;
- a preliminary analysis of the local industrial infrastructure and prevailing economic conditions must be made;
- appropriate scientific and technological educational programmes are indispensable if the required transfer of technology is to take place successfully.

The explanatory memorandum should accompany the Model Programme as a covernote and include the list of Panel members.

13. The Panel welcomed the account presented by UNIDO for the implementation of the Model Programme for Vaccine Production in Africa by the establishment of a Demonstration and Training Unit at the National Veterinary Laboratory at Garoua, Cameroon .

14. The Panel gives this concept its full support and recommends its speedy implementation with the proposed collaboration of the Governments of France and the Netherlands.

15. The possibilities of fund raising for the programme on the Industrial Production of Biologicals (IPB) was discussed with a number of suggestions being made by members of the Panel.

The Panel recommends that UNIDO prepares a document describing the policy and objectives of this programme for distribution to the organizations such as Government Agencies for Overseas Development, the European Economic Community, the World Bank and Regional Development Banks with the purpose of obtaining financial contributions for the IPB programme fund.

16. The Panel received a report from the representative of the PAHO about its recently inaugurated programme for the eradication of indigenous transmission of wild poliovirus in the region of the Americas.

17. The Panel recommends that UNIDO and PAHO hold a joint meeting in late 1985 or early 1986 to discuss immunization programmes in the countries of the Americas and regional production of vaccines for the Expanded Programme on Immunization.

18. The Panel recommends that UNIDO prepares a model programme for the production of blood derivatives.

19. The Panel recommends that UNIDO prepares a document on diagnostics with particular relevance to the transfer of technology for manufacture of diagnostics used in primary health care.

20. The programme for future meetings of the Panel was discussed with the recommendation that specific subjects be identified for discussion when new developments are of interest and importance to the members, these subjects to be introduced by an invited expert.

21. The Panel recommends that its Fourth Meeting should be held in Ottawa, Canada between November 1985 and March 1986.

III. SUMMARY OF THE DISCUSSIONS

22. The report on the Second Meeting of the Panel was discussed and adopted without changes. A member of the Panel expressed concern that UNIDO was not invited to participate in the Bellagio Conference on "Protecting the World's Children: Vaccines and Immunization within Primary Health Care" held in March 1984. He noted that it was already expressed in the Second Meeting of the Panel(UNIDO/IO.617, para 21) that an Ad Hoc Task Force for Child Survival was formed to develop both country-programme and research aspects of accelerated immunization activities. Five agencies (WHO, UNICEF, World Bank, UNDP and the Rockefeller Foundation) agreed to provide the Task Force with modest staff and logistic support. The activities of Task Force includes working with selected countries (Colombia, India and Senegal) to develop country-programmes for accelerated immunization programme proposals using primary health care for presentation to bilateral and multilateral donor agencies for funding. The Second Bellagio Conference will be held in Bogota, Colombia in October 1985. It was recommended that UNIDO should not only declare its interest in participating this Conference but also in collaborating with the Task Force for Child Survival.

23. Another member stressed the importance of the recommendation of the First Meeting of the Panel(UNIDO/IO.583, para 22), which was reconfirmed in the Second Meeting (UNIDO/IO.617, para 23) and stated that FAO should be invited to become a member of the Panel. The Secretariat advised the participants that a representative of FAO will be invited to the next meeting of the Panel.

24. Several members emphasized the importance of the statement under para 37 of the Second Meeting of the Panel (UNIDO/IO.617 , para 37), and highlighted that the importation of vaccines for the national immunization programmes can actually promote the local and regional production. A member, while summarizing the progress made by the Expanded Programme on Immunization (EPI) in the Americas since 1977 to date, expressed that PAHO's Revolving Fund for the purchase of vaccines and related supplies ultimately promotes the regional self-reliance in matters of vaccine production and quality control. At this point of the discussion the Panel received the draft Progress Report on the Expanded Programme on Immunization in the Americas (dated 20 May 1985) from the representative of the PAHO about its recently launched programme for eradication of indigenous transmission of wild polioviruses in the American Region by the year 1990.

25. The third draft of the Model Programme was discussed in length. The Panel congratulated to the authors, the Director General of the RIVM, his team and the UNIDO Secretariat and agreed that the document both from technical and economic point of view is appropriate and adequate. Several members of the Panel felt that the document is excellent. The representative of PAHO said that according to the comments on the document from the countries of the American region, the Model Programme gives guidance both in technical and economic matters, and therefore the UNIDO's document is fulfilling the needs of PAHO. Several members expressed that vaccine manufacturers in developing countries appreciated the document even in its draft form.

26. While discussing the quality of the Model Programme a member of the Panel suggested to change the title of the document by omiting its last three words: "in developing countries". According to his view the "Model Programme for the Production of Vaccines" can also be used by developed countries. Another member emphasized the requirements of high quality personnel if the Model Programme is to be realized.

27. The Panel agreed that there are worldwide used alternative production systems and methods for vaccine manufacture such as stationery cultivation of BCG vaccine, oral poliomyelitis vaccine, pertussis vaccine production on shaker , etc. It was agreed that the attention of countries interested in realizing the Model Programme, should be drawn to the necessity of a preliminary analysis of local industrial infrastructure and prevailing economic conditions. Furthermore the Panel agreed that without an appropriate scientific and technological education programme the transfer of technology cannot be carried out successfully. While summarizing the discussions on the Model Programme, the Panel recommended the drafting of a short explanatory memorandum reflecting the views of Panel members with regard to the modalities of its implementation.

28. A member stressed that the Model Programme advocates a new concept for vaccine production, that is the unit process which has not yet been adopted globally. The representative of PAHO expressed that the unit process has not yet been accepted by WHO.

29. A member of the Panel stressed that advances in biotechnology are likely to revolutionize wide economic sectors such as food, health, energy and industry, however the most important impact of biotechnology will be on health.

According to his views the quality of life is to be improved by new biotechnology, and therefore governments are again becoming interested in vaccine production. The facilities described in the Model Programme can be used for the production of a new generation of vaccines, namely produced by new biotechnological methods. Another member emphasized that the new generation of vaccines are not marketed yet and their production technologies will not be freely available.

30. The UNIDO Secretariat presented a brief review on the establishment of UNIDO International Centre for Genetic Engineering and Biotechnology (ICGEB). The Centre's activities will range from undertaking reserach and development (in areas such as the bioconversion of biomass, microbiology of hydrocarbons, large-scale fermentation and process development, protein engineering, the development of stress tolerance in plants, improvements of plants for nutritional contents, and animal and human vaccine development) to the training of multidisciplinary teams of scientists from developing countries who will be able to carry out substantial research and development activities, including pilot plant operations.

It was decided in 1984, that the Centre would consist of two equal components, one located in New Delhi, India and the other in Trieste, Italy. At present, the Preparatory Committee (in which all signatory states of the ICGEB are represented) is working towards the target of starting operational activities, including research and training in provisional facilities, at both components by the end of 1985. The New Delhi component will focus its applied research and development efforts on the areas of agriculture as well as human and animal health while in Trieste applied research efforts will be focused in the areas of industrial biotechnology processes.

31. The Panel agreed that vaccines of high quality and trained manpower for the national immunization programmes are pre-requisites to attain the goals of EPI. The Panel noted that PAHO provides strict control of vaccines procured through the EPI Revolving Fund, which starts with the selection of the supplier. The vaccine potency is also monitored at the delivery point and in the national storage facilities. For such a quality control network, highly experienced personnel is required. In this context the representative of PAHO expressed that effective utilization of trained and

experienced human resources is the most important component of manpower development.

32. The costs of immunization were discussed in depth. According to the recent data provided by PAHO, the costs of EPI vaccines for the total immunization dose of a child are US$ 1.32. The costs of the immunization is significantly higher. A member of the Panel expressed that in Burkina Faso the difference between the costs of vaccines and those of the full course of immunization per child is four-fold. According to another member, in order to achieve the goal of EPI, that is providing immunization services against diphtheria, whooping cough, tetanus, measles, tuberculosis and poliomyelitis for every child in the world by 1990s, 5-7 times more vaccines would be required. Up to date, EPI vaccines have been supplied by a few large manufacturers, however, their existing capacity would have to be enlarged to meet the above increased demand. He suggested that UNICEF will not be able to keep the present low prices if creation of new capacities for vaccine production would be required.

33. The UNIDO Secretariat presented the report on mission for establishment of a pilot demonstration plant for production of human vaccines for Africa in Cameroon. It was emphasized that the LANAVET is in operation since September 1984, however only about 20% of its capacity will be utilized within the forthcoming 5 to 10 years for production of veterinary vaccines. The fixed capital investment for the realization of LANAVET amounted to US$ 20 millions. Within the facilities there is ample space enough to commence immediately vaccine production for human use in case equipment is provided for those technological unit processes, which cannot be shared with the veterinary vaccine operations. It was also stressed that a pilot demonstration plant used mainly for training purposes cannot simply be considered as subject of a techno-economic feasibility study due to the complexity of intangible influential factors. The main output of the project will rather be the skilled manpower than the vaccines manufactured which can be only regarded as a surplus.

34. The Panel noted the presentation, gave the project concept its full support and requested the Secretariat to prepare a progress report on the project for its next meeting.

35. The UNIDO Secretariat presented to the Panel the project document UF/RAF/84/252 - "Regional Meeting on the Availability and Distribution of Vaccines Produced in Africa". The Regional Meeting would discuss the best way (i) to develop and promote quality control units for vaccines and other biologicals manufactured locally or imported; (ii) to promote the existing production units by enlarging their market in Africa in order to achieve an economic scale of production, and (iii) to develop and promote production of vaccines in Africa by rehabilitating, strengthening and extending the existing production facilities. At least three alternatives of promotion of vaccine production in Africa might be discussed in the meeting. These are as follows: (i) international certification allowing national products of high quality to be used in the national immunization programmes in the African region; (ii) government's commitments to purchase their own national products meeting international standards; and (iii) bilateral and multilateral agreements at subregional and regional level for rehabilitating, strenghtening and extending the existing production units, for the development of new units and promotion of export and import of regional products. Representatives of WHO, UNICEF and FAO will be invited to participate and give their views on the above topics.

36. The Panel noted the presentation, and a member suggested that the UNIDO Regional Meeting on the Availability and Distribution of Vaccines Produced in Africa could be held immediately after the Third International Conference on Immunization in Africa, which is scheduled to be convened in Niger in early 1986. The Panel was advised that about 240 participants from the African developing countries, UN organizations and developed countries will take part in the Conference which is jointly organized by the Institute Pasteur, the International Children's Centre and Mérieux Foundation. It was suggested that UNIDO should invite representatives of African vaccine manufacturers to the Conference.

37. The Panel discussed the possibilities of obtaining financial contributions for the IPB programme fund in length and recommended that UNIDO should prepare a document describing the policy and objectives of this programme for distribution to donor organizations such as Government Agencies for Overseas Development (CIDA, DANIDA, SIDA, USAID, etc.), the European Economic Community, the World Bank, Regional Development Banks (African,Asian and Inter-American Development Banks) and UNDP.

38. Before closing the meeting the Panel discussed other relevant subjects.

39. The Chairman of the Panel announced that the Asian Seminar on Blood and its Derivatives will be held in Macao in 1986.

40. The Representative of PAHO stressed that the programme on the eradication of indigenous transmission of wild poliovirus in the American region provides an excellent opportunity to promote the production of poliomyelitis vaccine in the region. He and the Secretary of the Panel suggested a meeting in order to discuss the matter and prepare a document for the Panel.

The Panel recommended that UNIDO and PAHO should hold a jointly meeting in late 1985 or early 1986 to discuss invitation programmes and regional production of vaccines for the EPI.

41. The Panel agreed that its Fourth Meeting will be held in Ottawa, Canada between November 1985 and March 1986.

Annex 1

List of Participants

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